

CLAIMS

1. A hydrocarbon-producing catalyst obtainable by supporting a ruthenium compound on a support composed of a manganese oxide and an aluminum oxide, and which satisfies at least one of characteristics (1) and (2):

(1) the catalyst being treated with an aqueous alkaline solution and subsequently subjected to calcination treatment in the air at 150 to 500°C,

(2) the aluminum oxide being an aluminum oxide in which pore volume formed by pores having a pore diameter of 8 nm or more accounts for 50% or more of total pore volume.

2. The catalyst according to claim 1, wherein the supported amount of the ruthenium compound is from 0.5 to 5% by weight in terms of ruthenium metal on the basis of the catalyst before the treatment with the aqueous alkaline solution and the calcination treatment.

3. The catalyst according to claim 1 or 2, wherein at least one compound selected from alkali metal compounds, alkaline earth metal compounds, and rare earth metal compounds is further supported on the support.

4. The catalyst according to claim 3, wherein the supported amount of at least one compound selected from alkali metal compounds, alkaline earth metal compounds, and rare earth metal compounds is from 0.01 to 3% by weight in terms of oxide on the basis of the catalyst before the treatment with the aqueous alkaline solution and the calcination treatment.

5. The catalyst according to any one of claims 1 to 4, wherein the ratio of the manganese compound is from 10 to 70% by weight on the basis of the catalyst before the treatment with the aqueous alkaline solution and the calcination treatment.

6. The catalyst according to any one of claims 3 to 5, wherein at least one compound selected from alkali metal compounds, alkaline earth metal compounds, and rare earth metal compounds is a sodium compound.

7. A process for producing hydrocarbons, which comprises bringing a mixed gas containing hydrogen and carbon monoxide into contact with the catalyst according to any one of claims 1 to 6.

8. A process for producing a hydrocarbon-producing catalyst, which comprises treating, with an aqueous alkaline solution, a catalyst obtainable by supporting a ruthenium compound on a support composed of a manganese oxide and an aluminum oxide and subsequently subjecting the catalyst to calcination treatment in the air at 150 to 500°C.

9. The process according to claim 8, wherein the supported amount of the ruthenium compound is from 0.5 to 5% by weight in terms of metal on the basis of the catalyst before the treatment with the aqueous alkaline solution and the calcination treatment.

10. The process according to claim 8 or 9, wherein at least one compound selected from alkali metal compounds, alkaline earth metal compounds, and rare earth metal compounds is further supported on the support.

11. The process according to claim 10, wherein the supported amount of at least one compound selected from alkali metal compounds, alkaline earth metal compounds, and rare earth metal compounds is from 0.01 to 3% by weight in terms of oxide on the basis of the catalyst before the treatment with the aqueous alkaline solution and the

calcination treatment.

12. The process according to any one of claims 8 to 11, wherein the ratio of the manganese compound is from 10 to 70% by weight on the basis of the catalyst before the treatment with the aqueous alkaline solution and the calcination treatment.

13. The process for producing the catalyst according to any one of claims 10 to 12, wherein at least one compound selected from alkali metal compounds, alkaline earth metal compounds, and rare earth metal compounds is a sodium compound.

14. A process for producing hydrocarbons, which comprises bringing a mixed gas containing hydrogen and carbon monoxide into contact with the catalyst obtained by the production process according to any one of claims 8 to 13.